

MSc European Forestry
ERASMUS MUNDUS



Your second year in AgroParisTech, Nancy, France

Meriem Fournier

January 2024

Contact : meriem.fournier1@agroparistech.fr
meriem.fournier@inrae.fr



*Paris Institute of technology for
life, food and environmental
sciences*

Campus of Nancy

Key facts and figures (1)

- National Institute of Technology for Life, Food and Environmental Sciences
 - An institute created in 2007... with an history of 200 years
- French leading “*Grande Ecole*” (Elite higher education institution) in life sciences
 - World-class reputation
 - Training programs from master level (Flagship French MSc in engineering “diplome d’ingénieur”, MSC, PhD, Advanced Master, Executive Education)
- Offering solution to the main global challenges:
 - Fostering knowledge and understanding to enable humanity to better safeguard our ecosystems, feeding populations while preserving natural resources, and sustainably managing the environment

Key facts and figures (2)

- Our missions:

- education, research, outreach, entrepreneurship and innovation

- Our Disciplines:

- | | | |
|-----------------------|---------------------------------|---------------------------------|
| • Plant Sciences | • Nutrition and Health Sciences | • Water Engineering |
| • Animal Sciences | • Biotechnology and Green | • Remote Sensing |
| • Agronomy | • Chemical Engineering | • Ecotoxicology |
| • Food Sciences | • Forestry | • Economics and Social Sciences |
| • Ecology | • Microbiology | • Bioclimatology |
| • Data Science and AI | • Soil Sciences | • Statistics and Mathematics |

- Our Values:

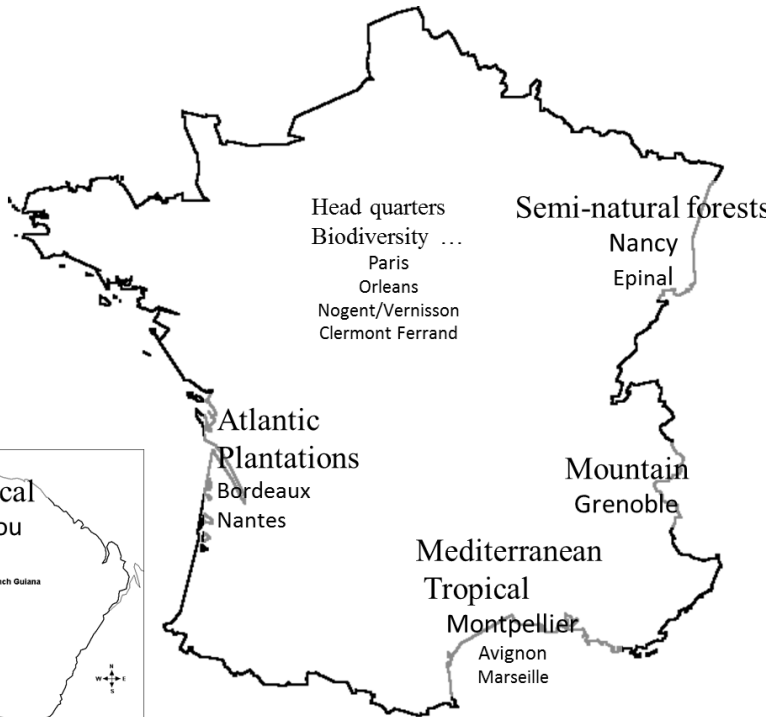
- international cooperation, student/scientific exchanges and open science

7 campuses among them 5 are dealing with forests, Nancy is the leader



Nancy coordinator of forest research and high education throughout AgroParisTech

Why Nancy ?



Nancy – Lorraine region :

**Only place where education,
research, R&D, forest
monitoring and management
are strongly linked, including all
fields of forest science and
issues , from nature
conservation to wood end uses.**

A long history



AgroParisTech Campus of Nancy

Founded in 1824-25, located downtown in the historical site



AgroParisTech Campus of Nancy

Trains 250 students (**MSc, PhD**) per year

Master and PhD programs on :

Forestry, Ecology, Plant sciences, Environmental economics



3 Research Units

- SILVA (forest ecology, tree biology, silviculture, wood formation and quality)



- BETA (forest and environmental economics)



- LIF Forest Inventory Lab



= 50 permanent researchers and teachers





AgroParisTech Nancy - research

Laboratoire d'excellence

ARBRE

Advanced Research on Tree and Forest Ecosystems. *Top level labelled cluster of labs.*

ARBRE involved INRAE and other institutes

INRAE = National and world's top research institute in Agriculture, Food and Environment (including forest sciences)

-> **2 other campuses** in Nancy you will be welcomed in during your first semester

- Key questions related to nutrient cycling, carbon storage and cycling, forest productivity, forest biodiversity, wood products, ecosystem services and sustainable forest management.
- A wide range of disciplines – genomics, biology, ecology, forest inventory, wood sciences, economics, sociology, silviculture, forest management –
- **300 researchers and teachers.**
- Partnerships with the French private and public forest sector (ONF, CNPF-IDF,
- International flagships projects within networks (EFI, Nancy Freiburg Zurich forest.net, Europe, North and South America, China ...)

Research facilities

Field facilities



Eddy flux tower of Hesse (57)

Silvicultural experiments



Mobile platform M-POETE

Labs



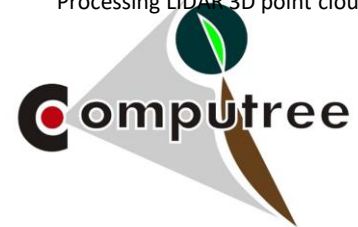
Forest system models

A carbon accounting tool for complex and uncertain greenhouse gas emission life cycles

Article in Environmental Modelling and Software - June 2018

THE COMPUTREE PLATFORM

Processing LIDAR 3D point clouds



Credit logo Computree : Pierre Gellhaye (INRA Nancy).

Computree Computree is a processing platform for 3D points clouds, obtained with LIDAR or photogrammetry. It aims to regroup algorithms for forests scenes analysis, in order to extract data on structure of trees and stands.

Technical tools

Large data bases

Journal of Vegetation Science

Advances in plant community ecology

Full Access

EcoPlant: A forest site database linking floristic data with soil and climate variables

Jean-Claude Gégout , Christophe Coudun, Gilles Baillly, Bernard Jabiol



French Forest Sector Model: version 1.0.
Presentation and theoretical foundations

Student residence

On-site residence in Nancy

- 76 rooms
- 12 studios
- Priority given to foreign students (for rooms)
- Monthly rent :
for a room ≈ 210 €
for a studio, ≈ 460 € to 520€



Nancy District



- 300 000 residents
- Student town : 50 000 students



- Eastern France, continental Europe
- 1h 30 from Paris by train
- Close to the Vosges Mountains
- Close to Belgium, Germany, Switzerland and Luxembourg

Nancy District – History

Porte de la Craffe (14th century)



Palais ducal (16th century)



Place Stanislas (18th century)



Nancy District – Green areas



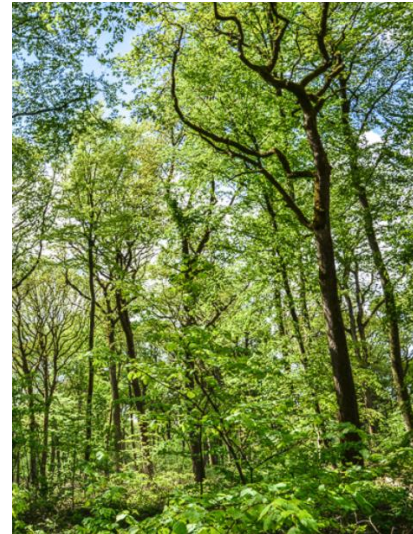
La Pépinière, 23 ha
500 m from the campus

Plateau de Malzéville, 400 ha
5 km from the campus



AgroParisTech forests

- Forest of Brin
- 20 km from Nancy
- 600 ha
- Many issues
 - Wood production, Oak and beech silviculture
 - Hunting
 - Recreation (close to the city of Nancy)
 - Risks & climate change (drought, processionary caterpillar)
 - Biodiversity, water management (pond)
 - History (battlefield of the world wars)

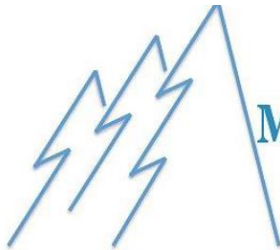


Nancy – student events



*Sports
Week-end hike
Restaurants
Music
Student nights*

Your education during the second year in Nancy



MSc European Forestry
ERASMUS MUNDUS

You are registered in our master program.

AgroParisTech



UNIVERSITÉ
DE LORRAINE

The national degree is called « AETPF »

**Your track (among 5) is called « FEN »
Forests and their environment**

FEN's objectives

- Train experts in the assesment and monitoring of Forest ecosystems in the context of climate change, to support the adaptation of multifunctional management.
 - Strong expertise in Ecology and data management.
 - Good knowledge of global and local issues in Forestry
- Small groups (10 to 15 students; French & International)
- Many options for pursuing a doctorate degree.

FEN's schedule

First semester (Sept – Jan)

➤ 9 courses (modules) = 30 ECTS.

➤ + French courses


Second semester (Feb – Aug)

➤ A thesis based on a 5 to 6-month internship (= 30 ECTS)

1st semester :

24 ECTS = 8 courses of 3 ECTS (with a limited choice)

Innovative European Forestry

- Temperate forest silviculture and industry
- Forests and forestry in a context of global change - with ALU 

Tools for innovative forest management

- GIS in forest ecology and management
- Managing collective innovation project
- Advanced statistics
- Models for forest research and management

(1 week in
Germany, 1 in
France)

Forest Science (Ecology and Economics) for forest management in the context of climate change

- Forest economics and ecosystem service assessment (**Comp**)
- Understanding tree structure and functions
- Dynamic of forest plant and tree communities
- Biogeochemical cycles in forest ecosystems

All are advanced courses : lectures, field and computer work, lab visits, conferences, personal work based on advanced tools and scientific literature analysis.

FEN's schedule – Field courses

Forest plant communities and forestry



Introduction to the forestry context in Eastern France



+ one course of 6 ECTS called « project »
= professional and creative skills in project mode
Learning by doing, integration of previous knowledge,
project management skills.

2 PROFILES

Individual

- 6 weeks in a research lab.
- Daily life of scientists
- Developing your own skills working with a researcher
- Defining a research approach (like in the beginning of a thesis)

Team (3 to 5 students)

- Question proposed by a supervisor (impacts of climate change, innovative management, changes in policies...)
- Field work, data processing, contact with researchers, practitioners and local policies
- Developing skills in team work



PROJECT REPORT AND DEFENSE

2nd semester :

Your master thesis in a forest private or public research or RDI or consulting or ... institution

- **You are free to find your supervisor and host structure (in Nancy but also everywhere in France or abroad, just take care of Erasmus Mundus rules = not in your home country)**
- **Your internship/thesis subject is presented as a « job offer » by the host structure. Requirements are :**
 - **the proposed activity involves to solve problems using innovative thinking and methods (at master level)**
 - **you are supported by an AgroParisTech teacher with regular meetings.**

2nd semester :

Your master thesis in practice

- **French master degree : The thesis is associated to a 5 to 6 month internship (compulsory).**
- **French law : interns have a contract with the hosting institution (signed by you, AgroParisTech and the host institution). They are paid (not so much) if the HI is in France.**
- **How to prepare your master thesis :**
 - **start early (november)**
 - **find the host institution and the supervisor with the help of an AgroParisTech teacher who will be your tutor.**
 - **AgroParisTech communicates offers.**

See you all here !

Questions ?

Vosges mountains, autumn

Key facts and figures (3/3)

- **7 campuses (not all in Paris)**
- ~3000 trained students (50% engineering, 16% international)
- ~830 staff including ~280 academic staff
- **22 research units** (mostly joint with INRAE >>> an overall potential of 1000 researchers)
- 5 Education and Research Departments
- Entrepreneurship support to students/alumni including **4 thematic InnLabs** (incubators) with a **Forest InnLab**
- **12 academic & research chairs** with leading French companies and other socio-economic actors
- Large experimental facilities: 1 Experimental Farm + 1 Experimental Pilot Plant + **3 Forests (790 ha)**
- 1 broad alumni community (18.000 members)

Nancy District – a forest environment

